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## Colombia

### BIOFUELS ANNUAL

## Colombian Government Sets New Benchmarks for Local Ethanol Demand

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**Report Highlights:**

The Colombian government issued a decree that beginning in 2012, all new vehicles must bear E-85 flex-fuel technology. Biofuels blends E-10 and B-5 are expected to be reached by 2010 as mandated. In 2008, ethanol production dropped 6.1 percent to 256 million liters due to a sugarcane workers strike, while biodiesel production increased to 89 million liters. In 2009, ethanol production is expected to increase, setting a new record high. Biodiesel production is expected to rise as 5 new facilities enter into production.

**Post:**

Bogota

**Commodities:**

**Author Defined:**

Colombia is the world's second-largest ethanol producer from sugarcane after Brazil and the second-largest producer of biofuels in Central and South America. Ethanol production in Colombia started in late 2005 and palm-oil biodiesel production in late 2007. Governmental regulations established a mandatory blend of 10 percent ethanol with gasoline and 5 percent biodiesel with fossil diesel. Current ethanol production covers 85 percent of the local needs to comply with the mandated blending. Biodiesel has not reached the 5 percent mix because biodiesel plants are entering into production later than originally expected.

**Ethanol:** Of the 13 sugar mills in Colombia, 5 of these plants produce all of the current ethanol production, approximately 1.05 million liters per day. Colombia uses Indian technology that has the advantages of handling vinasse more efficiently, saving water, and reducing energy use. The vinasse in Colombia is processed and converted into fertilizer. The five plants are owned by sugar mills situated in the Cauca river valley in southwestern Colombia. An additional project that would add 300,000 liters per day of ethanol production at the Riopaila sugar mill was temporarily suspended, due mainly to the modification in the formula made by the government that calculates the price paid to ethanol producers (see policy section below).

<b>Ethanol production/Consumption/trade (million liters)</b>				
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009*</b>
<b>Ethanol</b>				
Beginning stocks	5	15	10	10
Production	269	275	256	302
Imports	0	0	0	0
Total supply	274	290	282	312
Exports	0	0	0	0
Consumption	259	275	272	297
Ending stocks	15	15	10	15
* estimate				

Colombia's current ethanol output is 1.05 million liters per day operating 22 days a month on average. As a result of increased production efficiency and the ethanol plants' ability to work more days, total output increases have resulted without expanding actual plant capacity.

Also, Colombia's capital city, Bogotá, recently increased the vehicle circulation restriction from 8 to 14 hours per day, causing a reduction in ethanol demand of 511,000 liters in the Capital city, where 40 percent of total fuel demand is concentrated. Nevertheless, the mandatory E-10 blend will

be impossible to reach without increases in plant capacity.

Research and feasibility studies for new sources of ethanol production with different feed stocks such as sugar beets, yuca and others continue under development. However, there are restrictions on the availability of these feedstocks. An ethanol production project using sugar beets has been delayed due to a lack of consistent supply of beets. The lack of sustainable supply of feedstock has negatively impacted foreign investment.

The Colombian government is currently supporting small-scale pilot production plants instead of larger scale facilities. Although there are large quantities of cane for panela in production that could be used for ethanol production, most of it is produced by small scale farmers, making the logistics of supplying feedstocks for the industrial production of ethanol difficult. Also, a project of producing ethanol from yuca was diverted into a yuca flour project due to the uncertainty of the yuca supply.

**Biodiesel:** Currently, all the biodiesel production and the key projects underway use palm oil.

Biodiesel production increased in 2008, although at a lower pace than initially expected due to delays in building refineries. Adding to the plant capacity of 86,000 tons per year reached in 2008, five new plants are expected to enter into operation during 2009 to total 230,000 tons production capacity per year by the end of 2009, a calculated production capacity of 791,000 liters per day. The Colombian Ministry of Energy estimates that domestic biodiesel demand at 839,000 liters per day will be met by 2010.

<b>Biodiesel production/Consumption/trade in Millions of Liters</b>			
	<b>2007</b>	<b>2008</b>	<b>2009*</b>
<b>Biodiesel</b>			
Beginning stocks	0	1	6
Production	9	89	330
Imports	0	0	0
Total supply	9	90	336
Exports	0	0	0
Consumption	8	84	320
Ending stocks	1	6	16

\*estimate

Pure ethanol in Colombia is produced with sugarcane and processing plants for ethanol are part of

the same production complex of sugar. All Colombian biodiesel is produced from palm oil.

<b>Quantity of Feedstock Use in biofuel Production in Metric Tons</b>				
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009e</b>
<b>Biodiesel</b>				
Vegetable Oil				
Soybean oil				
Rapeseed Oil				
Palm oil	0	8,300	80,000	324,000
Coconut oil				
Animal Fats				
Recycled Vegetable oil				
Other				
<b>Ethanol</b>				
Corn				
Wheat				
Sugarcane	3,586,667	3,666,667	3,413,000	4,030,000
Sugar beat				
Rye				
Molasses				
Wood				
Cassava/tubers				

e: estimated

## **Consumption**

Colombia mandated a 10 percent ethanol blend with gasoline and 5 percent blend of biodiesel with fossil diesel in 2008. Currently, Colombian ethanol production covers 85 percent of the country's needs at the e-10 level and Colombian biodiesel production fulfills only 20 percent of the total required mix. To make matters more challenging, the biodiesel minimum blend requirement will increase to 10 percent by 2010. Current production of biodiesel does not cover the minimum requirements.

## **Trade**

Colombia did not import biofuels in 2008, even though the government announced imports would be temporarily authorized to mix with locally-produced fossil diesel to improve its quality. In the short run, biofuel imports are not expected since new biodiesel facilities are entering into

production and new investments in ethanol projects are expected.

## **Stocks**

Since minimum blend requirements are not being covered in Colombia, stocks merely consist of working inventories of less than a month of consumption.

## **Policy**

In 2008, the Colombian government set a policy framework for the biofuels sector that guarantees a minimum price to producers, tax exemptions for feedstock growers, and an overall commitment from the government to support biofuel production and development.

On March 31 2009, the government issued decree 1135 establishing that by 2012, all new vehicles lower than 2000 cubic centimeter engine, that are assembled, imported, produced or commercialized in Colombia should bear the E-85 flex fuel technology system. Although the vehicles will work with an E-85 mix, the decree does not specify if the actual E-10 mix will be modified. According to the minister of Energy, the decree aims to draw a potential broader demand for ethanol in Colombia to encourage new projects and investment in the sector.

On April first, a day after the above decree was issued, the Ministry of Energy issued a resolution replacing the former international refined sugar price with the international raw sugar price as the base price for calculating the price paid to ethanol producers. This decision reduced the income of ethanol producers due to the lower price of raw sugar in comparison to refined sugar. This measure created much concern among ethanol producers which have requested that the government review the decision because it discourages new investment.